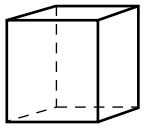
Name _____ Class _____ Date _____

Reteaching 7-1

Three-Dimensional Figures

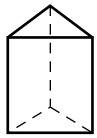
A **prism** is a three-dimensional figure with two parallel and congruent polygonal **bases.** It is named by the shape of a base.

Rectangular prism
The bases are rectangles.



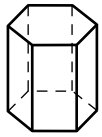
rectangular prism

Triangular prism
The bases are triangles.



triangular prism

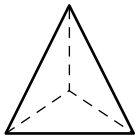
Hexagonal prism
The bases are hexagons.



hexagonal prism

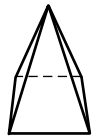
A **pyramid** is a three-dimensional figure with only one base.

Triangular pyramid
The base is a triangle.



triangular pyramid

Square pyramid
The base is a square.



square pyramid

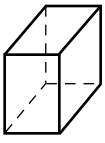
The **cylinder, cone,** and **sphere** are also three-dimensional figures.

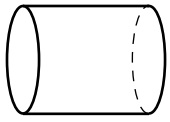
cylinder

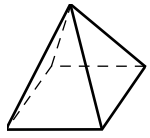
cone

sphere

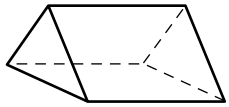
Give the best name for each figure.

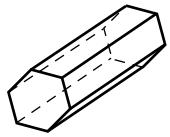
1. 

2. 

3. 

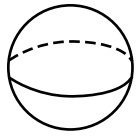
4. 

5. 

6. 

7. 

8. 

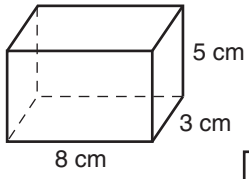
9. 

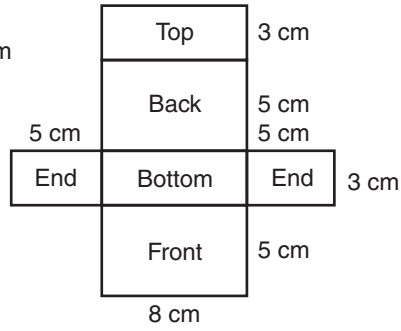
Name _____ Class _____ Date _____

Reteaching 7-2

Surface Areas of Prisms and Cylinders

The **surface area** of a prism is the sum of the areas of its faces. You can use a **net,** or pattern, for the prism to help you find its surface area.

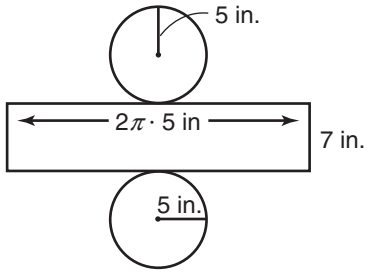


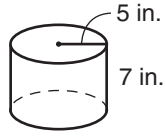


- Add the areas of all the surfaces.

Surface Area
= front + back + top + bottom + end + end
= $(8 \cdot 5) + (8 \cdot 5) + (8 \cdot 3) + (8 \cdot 3) + (5 \cdot 3) + (5 \cdot 3)$
= $40 + 40 + 24 + 24 + 15 + 15$
= $158\ \text{cm}^2$

- To find the surface area of a cylinder, add the area of the rectangle and the areas of the bases. Use 3.14 for π.

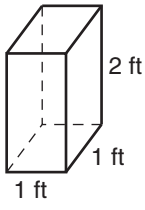


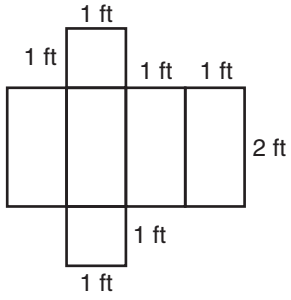


Surface area
= top + bottom + side (rectangle)
= $(\pi \cdot 5 \cdot 5) + (\pi \cdot 5 \cdot 5) + (2\pi \cdot 5 \cdot 7)$
= $(25\pi) + (25\pi) + (70\pi)$
≈ $120 \cdot 3.14 = 376.8\ \text{in.}^2$

Use the net to find the surface area. Round your answers to the nearest whole unit.

1.





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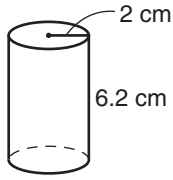
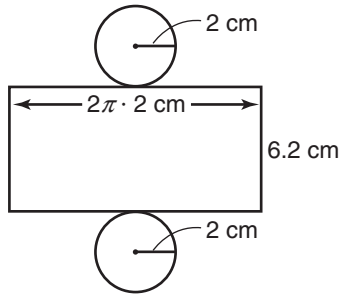
2.





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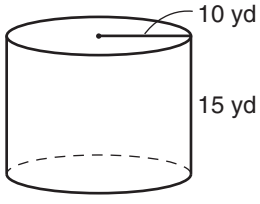
Draw a net for each figure. Then find the surface area to the nearest tenth of a unit.

3.



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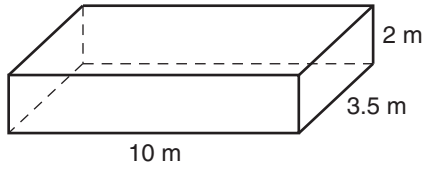
4.



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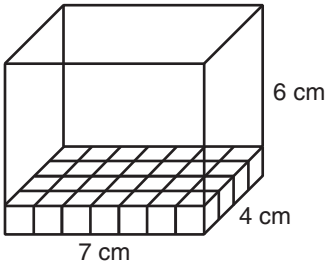
Name _____ Class _____ Date _____

Reteaching 7-3

Volumes of Prisms and Cylinders

The **volume** of a three-dimensional figure is the number of cubic units needed to fill the space inside the figure. A **cubic unit** is a cube whose edges are 1 unit long. You can find the volume of a prism or a cylinder by finding the *area of the base* (B) and multiplying by the *height* (h). Use 3.14 for π.



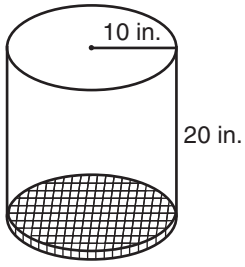
$B = lw$

$B = 7 \cdot 4 = 28 \text{ cm}^2$

$V = Bh$

$V = 28 \cdot 6 = 168 \text{ cm}^3$

The volume is 168 cubic centimeters.



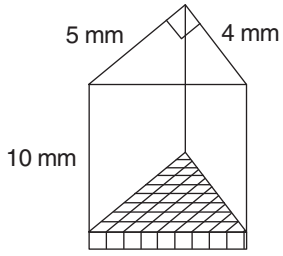
$B = \pi r^2$

$B \approx 3.14 \cdot 10 \cdot 10 = 314 \text{ in.}^2$

$V = Bh$

$V \approx 314 \cdot 20 = 6{,}280 \text{ in.}^3$

The volume is 6,280 cubic inches.



$B = \frac{1}{2}bh$

$B = \frac{1}{2} \cdot 5 \cdot 4 = 10 \text{ mm}^2$

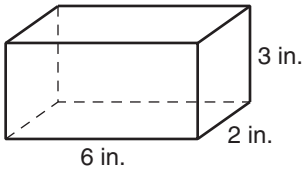
$V = Bh$

$V = 10 \cdot 10 = 100 \text{ mm}^3$

The volume is 100 cubic millimeters.

Complete to find the volume to the nearest tenth of a unit.

1.

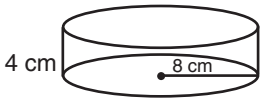


$V = Bh = lwh$

$= \_\_\_\_\_ \cdot \_\_\_\_\_ \cdot \_\_\_\_\_$

$= \_\_\_\_\_$

2.



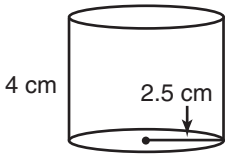
$V = Bh = \pi r^2 h$

$\approx 3.14 \cdot \_\_\_\_\_ \cdot \_\_\_\_\_ \cdot \_\_\_\_\_$

$= \_\_\_\_\_$

Find the volume. Round to the nearest cubic unit.

3.



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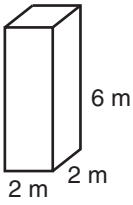
4.



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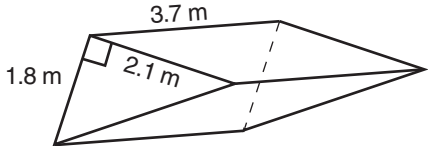
5.



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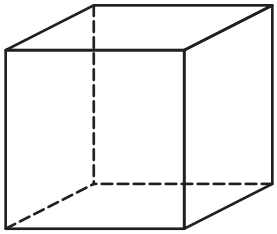
Name _____ Class _____ Date _____

Reteaching 7-4

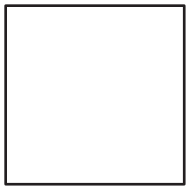
Cross Sections

A **cross section** is the two-dimensional shape that you see after slicing through a three-dimensional object.

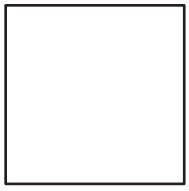
You can describe the cross section formed by the intersection of the cutting plane and the solid or you can sketch a picture.

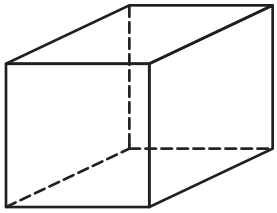


If you cut horizontally, the cross section is a square.



If you cut vertically, the cross section is a square.

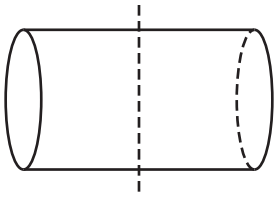




If you cut horizontally, the cross section is a rectangle congruent to the top face.

If you cut vertically, the cross section is a rectangle congruent to the side face.

Describe each cross section.

1. 

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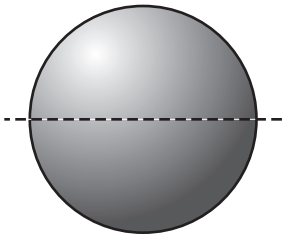
2. 

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